BEFORE THE DEPARTMENT OF
NATURAL RESOURCES AND CONSERVATION
OF THE STATE OF MONTANA

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IN THE MATTER OF PETITION TO THE	)	
DEPARTMENT OF NATURAL RESOURCES AND	)	
CONSERVATION FOR ESTABLISHMENT OF THE	)	**FINAL ORDER**
NORTH HILLS CONTROLLED GROUND WATER	)	
AREA NO. 41I-116636	)	

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Pursuant to the Montana Water Use Act, Mont. Code Ann. § 85-2-507, and after notice required by law, a hearing was held on September 12, 2006, in Helena, Montana, to determine if the temporary controlled ground water area established by Order dated October 11, 2002, (known as the North Hills Controlled Ground Water Area), should be extended for an additional two year period, allowed to expire, or be designated as a permanent controlled ground water area and establish appropriate conditions and/or controls. The Department of Natural Resources and Conservation has considered the evidence and testimony submitted concerning any such extension, expiration, or permanent designation.

PARTIES

All parties who were original parties in this matter remain parties for purposes of this Order. Appearing at the hearing conducted September 12, 2006, were James P. Madison from the Montana Bureau of Mines & Geology (MBMG) and Mr. Russell Levens, hydrogeologist for the Department of Natural Resources and Conservation. Mr. Madison presented the report titled "Hydrogeology of the North Hills, Helena, Montana" MBMG Open File Report 544 (MBMG Report). This report was prepared as a result of the establishment of the Temporary Controlled Ground Water Area and is a cooperative effort with the Lewis and Clark County Water Quality Protection District, MBMG, and the Department of Natural Resources and Conservation. Mr. Madison then answered questions regarding the report from those present at the hearing. Following Mr. Madison was Russell Levens. Mr. Levens provided a presentation regarding his comments (Levens Review) on the MBMG Report and then answered questions from those present at the hearing. Testimony was then taken from proponents of continuing or making permanent the Temporary Controlled Ground Water Area which included Vivian Drake, Lonnie Brookshire, Mary Clark, and Frank Patrick Crowley (as a partial proponent). Testimony was

then taken from opponents of continuing the Temporary Controlled Ground Water Area which included John Herrin, Michael Kakuk, Anita Varone, Anita Lowry, and Ed McHugh.

Individuals who provided written comments or testimony at the September 12, 2006 hearing were Vivian Drake, Kathy Moore of the Lewis and Clark County Water Quality Protection District, Justin Trafton of the Lewis and Clark County Water Quality Protection District, Mary Clark, Tona M. Pierson, Jodee R. K. Alm, and Lonnie Brookshire.

Official Notice was taken of the MBMG Report and Mr. Levens' written comments on the MBMG report (Levens Review). All other comment, testimony, and data presented by proponents or opponents were given under oath and have not been marked or identified as exhibits but are part of the official record in this matter.

ISSUE

At issue for in the current proceeding is whether the Temporary Controlled Ground Water Area designation should be allowed to expire, be extended for another two years, or become permanent; and the conditions and/or controls for any extended temporary designation or permanent designation.

FINDINGS

1. The Department of Natural Resources and Conservation (DNRC or Department) designated the North Hills Temporary Controlled Ground Water Area on October 11, 2002, after hearing pursuant to Mont. Code Ann. §§ 85-2-506 and 507, for a period of two years. (Department File)

2. The Temporary Controlled Ground Water Area is comprised of a 52.5 square mile area within Sections 1-19, Township 11 North, Range 3 West; Sections 1-3, E½ 4, E½ 9, 10-15, 22-24, Township 11 North, Range 4 West; Sections 26-35, Township 12 North, Range 3 West; Sections 21-23, 25-28, E ½ 33, 34-36, Township 12 North, Range 4 West, Lewis and Clark County, Montana. See map for exact designated area boundary. (Department File)

3. The Temporary Controlled Ground Water Area designation was extended for two years by the Department on October 8, 2004. The purpose for the two year extension was to provide time to collect and analyze further facts to determine whether a permanent Controlled Ground

Water Area is warranted. The two year extension terminates on October 11, 2006. (Notice of 2-year Extension of North Hills Temporary Controlled Ground Water Area)

4. During the time that the Temporary Controlled Ground Water Area was established, the Department of Natural Resources, the Montana Bureau of Mines and Geology (MBMG), and the Lewis and Clark County Water Quality Protection District, in cooperation with individual well owners within the Temporary Controlled Ground Water Area, gathered information on aquifer characteristics, aquifer recharge, and aquifer withdrawals. Information was also collected regarding water quality concerns in the Temporary Controlled Ground Water Area. (Department File)

5. On August 4, 2006, Notice was given that the MBMG had completed their report entitled *Hydrogeology of the North Hills, Helena, Montana*, August 2006, Open File Report 544 (MBMG Report), analyzing the data gathered during the temporary designation. The MBMG Report and the DNRC's comments, Levens Review, were made available on the DNRC's Water Resources Division website, or that a copy of the MBMG Report and DNRC's comments were available from the DNRC Water Resources Division. The Notice states that the DNRC will hold a hearing on September 12, 2006 at 1:30 p.m., and that comment, evidence and other information will be taken on the MBMG Report, DNRC's comments on the Report, and data gathered since the temporary designation to determine whether the Temporary Controlled Ground Water Area designation should be allowed to expire, be extended for another two years, or become permanent; and the conditions and/or controls for any extended temporary designation or permanent designation. (Department File)

6. The geology of the North Hills area is characterized by Pre-tertiary Bedrock material across the northern and western portions of the area, a belt of Tertiary material overlying bedrock across the middle of the area, and Quaternary valley fill material across the southern portion of the area. Generally, the higher elevation areas are characterized by the Pre-tertiary Bedrock material, the middle elevation areas are characterized by the Tertiary material and the lower elevation areas are characterized by the Quaternary valley fill material. (MBMG Report)

7. Water production from wells is generally most restricted in the Pre-tertiary Bedrock material where water is produced from joints, fractures and other forms of secondary porosity in the bedrock. Water production from wells within the Tertiary aquifer devolves primarily from interbedded silt and clay with minor lenses of sand and gravel. Water production from the

Tertiary aquifer can be expected to be better than that from the Pre-tertiary Bedrock. Water production from the Quaternary aquifer devolves primarily from pebble to cobble gravel in a silt/sand matrix. Wells in the Quaternary deposits are the most productive. (MBMG Report, Levens Review)

8. Data regarding precipitation in the Temporary Controlled Ground Water Area is limited, but precipitation appears to be as much as 25% less than the long term average of 11.9 inches recorded at the Helena Weather Service Office located about 8 miles south of the area. (MBMG Report)

9. The ground water in the area is recharged through a combination of precipitation, streamflow, and from Helena Valley Irrigation Canal and laterals and the over-application of irrigation water. Generally, the southern portion of the area (the Quaternary valley fill and portions of the Tertiary material) is recharged by a combination of contributions from Silver Creek, Canal and lateral leakage, excess irrigation water application and precipitation. The northern portion of the area (Pre-Tertiary Bedrock material and northern portions of the Tertiary material) is recharged primarily by precipitation only. (MBMG Report)

10. The potentiometric surface of ground water (the direction of ground water flow) in the area runs down gradient from the north/northwest to south/southeast throughout the entire area. (MBMG Report)

11. Annual aquifer recharge in the area consists of approximately 9200 acre-feet due to precipitation infiltration, approximately 2000 acre-feet due to infiltration from Silver Creek streamflow, 1220 acre-feet due to infiltration from Helena Valley Irrigation Canal and laterals, and 1825 acre-feet due to infiltration of excess irrigation water and precipitation applied to irrigated fields. A reasonable estimate of the total supply (annual recharge) for the area is approximately 14,245 acre-feet per year. (MBMG Report, Levens Review)

12. Losses to the aquifer underlying the area include underflow across the southern boundary of the area, discharge from agricultural drains, and consumptive use from wells. Approximately 12,970 acre-feet per year moves through the underground aquifer and across the southern boundary of the area as underflow, approximately 725 acre-feet per year is discharged from the aquifer through agricultural drains, and approximately 500 acre-feet per year is consumptively used from withdrawal of ground water by wells. (MBMG Report, Levens Review, Department File)

13. Approximately 4% of the annual water budget for the ground water system in the North Hills Temporary Controlled Ground Water Area is consumed by wells within the area. (MBMG Report)

14. Water levels in wells are highly variable and dependent on many factors. Wells down gradient and in close proximity to the Helena Valley Irrigation Canal and irrigated lands show a seasonal well level response due to leakage from the water delivery system and application of irrigation water. Wells in proximity to Silver Creek show a water level response correlated with the seasonal flow of Silver Creek. Water level responses in wells not correlated with irrigation delivery systems, irrigated land, or Silver Creek is less certain, but are primarily due to climatic factors and aquifer properties, with localized effects possibly resulting from adjacent well pumping or a combination of these factors. (MBMG Report)

15. Limited recharge during the recent drought and aquifer properties are the primary cause of water level declines in the area. Long-term declines in water levels are only apparent in two wells located in the area which only receives recharge from precipitation. These declines are in the order of 5 to 8 feet. (Levens 5/30/02 Memo, MBMG Report)

16. Water levels in wells within the area respond fairly quickly to precipitation and climatic variables. (MBMG Report)

17. Water demand in the North Hills Area is expected to increase from an average of 664,680 gallons per day (gpd) in 2003, to 1,494,080 gpd in 2025. (Helena North Valley Infrastructure Study, Department File)

18. The maximum contaminant level (MCL) for nitrate in public water supply wells established by U.S. EPA is 10 mg/L. There is no established maximum contaminant level for private wells. Of 127 wells sampled in the area between the year 2000 and July, 2006, the public water supply MCL was exceeded in two wells. Those two wells are private wells. (MBMG Report)

19. Nitrate concentrations as reported by Lewis and Clark County between 1988 and 2004 show that out of 146 samples taken, 5 samples exceeded the MCL. (Department File)

20. Data show the sources of nitrate are localized and there is no apparent large nitrate contamination plume in the area. Proliferation of septic drain fields, regardless of water withdrawal is the primary factor determining nitrate concentrations. Ground water withdrawals

have not been shown to adversely affect ground water quality in the area. Septic system density and design is more likely to affect water quality. (Department file, Helena North Valley Infrastructure Study, Levens Review)

CONCLUSIONS

1. The Department of Natural Resources and Conservation has jurisdiction over the parties and over the subject matter herein. Mont. Code Ann. §§ 85-2-506 and 507. (Findings 1 and 5)

2. Facts gathered during the 2-year Temporary Controlled Ground Water Area designation and any extension (study period) must be presented at a hearing prior to the designation or modification of a permanent controlled ground water area. The Department shall declare the area in question to be a permanent controlled ground water area if the Department finds the public health, safety, or welfare requires a corrective control to be adopted, **and** 1) there is a wasteful use of water from existing wells or undue interference with existing wells; 2) any proposed use or well will impair or substantially interfere with existing rights to appropriate surface water or ground water by others; **or**, 3) if any of the following are true; a) ground water withdrawals are in excess of recharge to the aquifer or aquifers within the ground water area; b) excessive ground water withdrawals are very likely to occur in the near future because of consistent and significant increases in withdrawals from within the ground water area; c) significant disputes regarding priority of rights, amounts of ground water in use by appropriators, or priority of type of use are in progress within the ground water area; d) ground water levels or pressures in the area in question are declining or have declined excessively; e) excessive ground water withdrawals would cause contaminant migration; f) ground water withdrawals adversely affecting ground water quality within the ground water area are occurring or are likely to occur; or g) water quality within the ground water area is not suited for a specific beneficial use defined by § 85-2-102(2)(a). (Mont. Code Ann. §§ 85-2-506(2) and -507(2))

3. There is no evidence to show that there is a wasteful use of water from existing wells or undue interference with existing wells. While some uses of water from wells in the Temporary Controlled Ground Water Area may be considered by some as overly consumptive, the uses are not per se wasteful. (Department File, July 31, 2002 Proposal for Decision, Mont. Code Ann. §§ 85-2-102(19), 312(1), 507(2)(b)(i))

4. The evidence does not support a finding that any particular proposed use or well will impair or substantially interfere with existing water rights to appropriate surface water or ground

water. The evidence supports a finding that water levels in wells are more likely to decline or rise in response to climatic conditions or irrigation water deliveries rather than to interference from adjacent wells. (Findings 14, 15, 16)

5. Approximately 4 percent of the annual ground water supply is consumed by water well withdrawals per year within the Temporary Controlled Ground Water Area. The evidence shows that ground water withdrawals are clearly not in excess of the annual recharge to the aquifers in the area. (Findings 11, 12, 13)

6. Even if the projected increase in population and resultant increase in water withdrawals were to occur, the water demand in year 2025 would be approximately double what is consumed presently. Consumptive use would be approximately 8 percent of the annual ground water supply. While this represents a consistent and significant increase in ground water withdrawals, the evidence does not support that the projected increase is excessive. (Findings 11, 12, 13, 17)

7. There is no evidence showing that significant disputes regarding priority of rights, amounts of ground water use by appropriators, or priority of type of use are in progress within the Temporary Controlled Ground Water Area. Individual complaints regarding well interference (of which there is only one in the record) do not rise to a significant dispute for an area the size of the Temporary Controlled Ground Water Area and particularly given that water levels in wells is highly variable. (Department File, 2002 Proposal for Decision, Findings 14, 15, 16)

8. The evidence does not support the conclusion that water levels in wells in the Temporary Controlled Ground Water Area are declining or have declined excessively. While some long term declines have been seen in the precipitation-only recharge portion of the area, those declines are the result of climatic changes and the water levels recover rapidly in response to precipitation events. Water level fluctuations in other portions of the area show only seasonal declines in response to streamflow and irrigation practices. (Findings 14, 15, 16)

9. There is no evidence in the record to show that ground water withdrawals are or would cause contaminant migration. The evidence shows that ground water contamination due to nitrates in excess of the public water supply MCL is localized and limited to only a few wells and/or samples. (Findings 18, 19, 20)

10. Ground water contamination in the Temporary Controlled Ground Water Area is due to the large number of septic systems and/or poorly designed septic systems and is not a result of ground water withdrawals. The evidence does not support a conclusion that ground water withdrawals are adversely affecting ground water quality, or that ground water quality deterioration is likely to occur as a result of such withdrawals. (Finding 20)

11. There is no evidence in the record to show that water quality within the Temporary Controlled Ground Water Area is not suited for a specific beneficial use defined by Mont. Code Ann. § 85-2-102(a) except in the limited locales where wells have shown nitrate levels in excess of the public water supply MCL. While not specifically referenced in the record, generally, the water quality in the area appears to be suitable for all of the beneficial uses defined by statute. (Department File, Findings 18, 19, 20)

12. The record shows that during the four years that the Temporary Controlled Ground Water Area was in effect, the necessary studies to obtain the facts needed to assist in designation or modification of a permanent controlled ground water area were conducted. The facts gathered during the study period have been presented at a hearing prior to a determination whether to extend the Temporary Controlled Ground Water Area for an additional two year period, allow the Temporary Controlled Ground Water Area to expire, or designate a permanent controlled ground water area. (Department File, Mont. Code Ann. §§ 85-2-506, 507)

13. The record shows that designation of a permanent controlled ground water area under the criteria in Mont. Code Ann. § 85-2-507 is not warranted at this time. In addition, the record and the studies conducted during the designation of the Temporary Controlled Ground Water Area show that 1) the public health, safety, or welfare does not require that a corrective control be adopted; 2) there is no wasteful use of water from existing wells or undue interference with existing wells; 3) no proposed use or well will impair or substantially interfere with existing rights to appropriate surface water or ground water by others; 4) ground water withdrawals are not excess of recharge to the aquifers in the are; 5) excessive ground water withdrawals are not very likely to occur in the near future because of consistent and significant increases in withdrawals from the area; 6) significant disputes regarding priority of rights, amounts of ground water in use by appropriators, or priority of type of use are not in progress within the area; 7) excessive ground water withdrawals are not causing contaminant migration; 8) ground water withdrawals are not adversely affecting ground water quality within the area nor is such adverse

affect likely; and 9) water quality within the area is generally suited for the beneficial uses defined in § 85-2-102(2)(a). (Mont. Code Ann. § 85-2-507(2))

ORDER

Pursuant to Mont Code Ann. § 85-2-507, the North Hills Temporary Controlled Ground Water Area No. 41I-116636 should be allowed to expire on October 11, 2006.

It is so **ORDERED**.

APPEALS

The Department's Final Order is a final decision of the agency and may be appealed by filing a petition in the appropriate court within 30 days after service of the Final Order or within such period as may be allowed by applicable law. If a petition for judicial review is filed, the Department will transmit a copy of the tape(s) of the oral proceedings to the District Court along with documentary evidence in the file. If a party to the proceeding elects to have a written transcription prepared, that party may purchase the tapes and have a transcript prepared.

Dated this 4th day of October, 2006.

/Original signed by David A. Vogler/
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Hearings Officer
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